

ADOT FY16 HIGHWAY SAFETY IMPROVEMENT PROGRAM APPLICATION

Agency:	City of Apache Junction	Title of Project:	Ironwood Drive Safety Improvements
County:	Pinal	COG/MPO:	MAG
District:	Phoenix Maintenance	HSIP Funds:	<input type="checkbox"/> STATE <input checked="" type="checkbox"/> LOCAL
Contact:		Phone:	E-Mail:
Raquel C. Shatz		480-474-8549	Rschatz@ajcity.net
Type of Safety Improvement:	Spot: <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Systemic: <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
Mark all that apply to your project: <input checked="" type="checkbox"/> PE <input checked="" type="checkbox"/> Cons <input type="checkbox"/> Procurement <input type="checkbox"/> Planning <input type="checkbox"/> Non-Infrastructure			
Anticipated Total Cost Estimate:		\$450,122.00	
Anticipated dollar amount of HSIP Funding:		\$450,122.00	
Anticipated Dollar amount of Local Match (5.7%) (5.66%):		\$0.00	Eligible for 100%
Anticipated Dollar amount of Other:		\$0.00	per 23 U.S.C. 120 (c)
Funding Source: <input checked="" type="checkbox"/> 100% HSIP <input type="checkbox"/> 94.3% HSIP <input type="checkbox"/> 94.34% HSIP		Cost Estimate Tab:	Tab5_100% Contract Install
Local Initiated Projects			
Anticipated Design Year (Construction/procurement year cannot be the same):		<input checked="" type="checkbox"/> FY16 <input type="checkbox"/> FY17 (State)	
If additional ROW is needed, what FY is purchase anticipated?:		<input type="checkbox"/> FY17 <input type="checkbox"/> FY18	
Anticipated Construction Year:		<input type="checkbox"/> FY16* <input type="checkbox"/> FY17 <input checked="" type="checkbox"/> FY18	
Administration of Project:	Agency: <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	ADOT: <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
If competing for State Funds, COG/MPO agrees to transfer TOTAL local HSIP OA to State.			<input type="checkbox"/> YES
Name and Title of COG/MPO Representative:		Eric Anderson, Transportation Director	
State Initiated Projects			
Anticipated Design Year (Construction/procurement year cannot be the same):		<input type="checkbox"/> FY17	
If additional ROW is needed, what FY is purchase anticipated?:		<input type="checkbox"/> FY17 <input type="checkbox"/> FY18	
Anticipated Construction Year:		<input type="checkbox"/> FY17* <input type="checkbox"/> FY18 <input type="checkbox"/> FY19 <input type="checkbox"/> FY20	
Basic Project Information			
1.	Have lower cost countermeasures been considered or implemented? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		
1a.	If "Yes", describe: If "No", explain why not:	Safety pullouts along this segment being installed in FY2015 HSIP project. No other lower cost countermeasures identified for crash types occurring on this segment.	
2.	Describe your safety improvement project in detail: (50 words or less)		

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2a.	Outside shoulder rumble strips Inside shoulder/centerline rumble strips (existing facility is 4-lane divided highway) Median cable barrier Median refuge for highly visible enforcement		
3.	Describe the location of this safety project:		
3a.	Ironwood Drive: Elliot Avenue to Baseline Avenue		
4.	What crash data screening method was used to identify this project?		
4a.	The City has experienced traffic fatalities and serious injuries on this stretch of road as a result of roadway departure crashes that warrant implementation of countermeasures.		
5.	What is the safety justification for the proposed project?		
5a.	Shoulder rumble strips are an effective means of reducing run-off the road crashes. They are primarily used to warn drivers when they have drifted from their lane. Median cable barriers are an effective countermeasure to reduce cross-median crashes, several of which have occurred along Ironwood Drive immediately south of the project limits resulting in fatal and serious injury crashes. Highly visible enforcement in medians reduces the frequency of crashes associated with speeding and aggressive driving.		
6.	Will there be ground disturbing activities?		<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
7.	Is project within applicants permanent ROW?		<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
7a.	If NO please explain:		
8.	Will any temporary right-of-way acquisitions be required?		<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
9.	Will there be any utility relocation needed?		<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO

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9a.	If YES please explain:			
10.	Does Section 4(f) apply to any portion of this project? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO			
10a.	If YES please explain:			
11.	Are there any other issues that may impact or delay development or construction of this project? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO			
11a.	If YES please explain:			
12.	Is this project in compliance with revised ADA Standards? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			
12a.	If NO please explain:			
13.	Does the project support Arizona's Strategic Highway Safety Plan? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			
14.	Are there any Studies, RSA's or Other evaluations that support this project? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO			
15.	HSIP Roadway Functional Classification:		Rural Minor Arterial	
16.	Average Daily Traffic Volume and Year Collected:		ADT: 14,500	Year: 2013
17.	What is the source of ADT?:	City of Apache Junction Traffic Counts		
18.	What is the posted speed limit?	NB - 45, SB - 50		
19.	Detailed engineer's cost estimate attached: <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO			
"Systemic" Safety Project				
20.	Completed B/C Ratio Tabulation Sheet Attached (Required): <input type="checkbox"/> YES <input type="checkbox"/> NO			
21.	Most current 3-5 Years Crash Data from ADOT ALISS database sorted by year & severity (required): <input type="checkbox"/> YES <input type="checkbox"/> NO			
22.	What are the inclusive dates of the crash data?			

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23.	If purchasing equipment or materials, who will install?	<input type="checkbox"/> Town/Cit <input type="checkbox"/> County <input type="checkbox"/> Contractor <input type="checkbox"/> Tribe	
24.	Does the project require proprietary Items (23CFR 635.411)?: <input type="checkbox"/> YES <input type="checkbox"/> NO		
25.	Is a list of locations for systemic projects provided on the attached form? <input type="checkbox"/> YES <input type="checkbox"/> NO		
26.	How are (will) the proposed locations be prioritized for replacement? (explain below)		
26a.			
27.	Are the supporting structures in good condition, meet local standards and have an anticipated service life longer than the countermeasure being installed?		<input type="checkbox"/> YES <input type="checkbox"/> NO
"Spot" Improvement Projects Only			
28.	Completed B/C Ratio Tabulation Sheet Attached (required):		<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
29.	Most current 3-5 Years Crash Data from ADOT ALISS database sorted by year & severity (required):		<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
30.	What are the inclusive dates of the crash data?	1/10/2010 - 12/31/2014	
31.	Have any infrastructure changes occurred within the work limits of this project during the years the crash data covers?		<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
32.	If YES please explain:		
33.	Project vicinity map is provided:		<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
34.	Project work limits map is provided:		<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
SHSP - All Projects			
35.	Which SHSP Emphasis Area (EA) does this project support?:	Roadway_Infrastructure_and_Operations	
35a.	Which EA Strategy does it support?:	(Lane/Roadway Departure) Reduce the frequency and severity of land- and roadway-departure crashes through roadway infrastructure improvements.	

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35b.	Does this project support a second SHSP EA? If so, which EA.:	Speeding_and_Aggressive_Driving		
35c.	Which EA Strategy supports the second EA?	Increase highly visible and effective enforcement to reduce the frequency of crashes associated with speeding and aggressive driving.		
35d.	Does this project support a third SHSP EA? If so, which EA.:			
35e.	Which EA Strategy supports the third EA?			
36.	Does this project support one of the nine FHWA proven countermeasures?:			<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
36a.	If so, which countermeasure?:	Longitudinal Rumble Strips		
37.	Does this project support one of the three Arizona Focus Areas?:			<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
37a.	If so, which focus area?:	Roadway Lane Departure		
38.	Which HSIP Improvement Category does this project support?:		Roadway	
38a.	Which HSIP Improvement Sub-Category does this project support?:			
	Rumble strips – edge or shoulder			
39.	Does your COG/MPO have a Strategic Transportation Safety Plan (STSP)?:			<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
39a.	If "YES", does this project support an Emphasis Area in the COG/MPO STSP?:			<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
39b.	List the EA:	Strategy 2.0 in Draft 2015 MAG Strategic Transportation Safety Plan - Eliminate Death and Serious Injury from Speeding and Aggressive Driving		
40.	Are any temporary safety countermeasures needed prior to this permanent solution being installed?			<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
40a.	If yes, please explain:			
B/C Ratio and Weighted Score				
41.	The calculated B/C Ratio is:	6.20	The Weighted Score is:	45.20

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Non-Infrastructure Project or Element			
42.	Does the crash data for this project indicate any of the following driver/pedestrian/bicyclist behaviors contributed to the identification of this project location?		
42a.	Impaired Driving (Alcohol or Drug)	<input type="checkbox"/> YES	<input type="checkbox"/> NO
42a.	Occupant Protection	<input type="checkbox"/> YES	<input type="checkbox"/> NO
42a.	Pedestrian and Bicycle Safety	<input type="checkbox"/> YES	<input type="checkbox"/> NO
42a.	Motorcycle Safety	<input type="checkbox"/> YES	<input type="checkbox"/> NO
42a.	Police Traffic Services/Speed Control	<input type="checkbox"/> YES	<input type="checkbox"/> NO
42a.	Lack of accurate/complete crash data	<input type="checkbox"/> YES	<input type="checkbox"/> NO
42a.	Emergency Medical Services	<input type="checkbox"/> YES	<input type="checkbox"/> NO
42b.	If "YES" to any of the above, has a grant proposal been submitted to any other agency/source for funding for the non-infrastructure portion of this project?		<input type="checkbox"/> YES <input type="checkbox"/> NO
42b.	If "NO", then explain why other sources have not been explored.		
42b.			
42b.	If "YES", then a copy of the proposal and disapproval must be submitted as an attachment.		
42c.	Is a letter attached from the agency department, i.e. PD, implementing this NI element if the agency is different from the "road owner"?		<input type="checkbox"/> YES <input type="checkbox"/> NO



Public Works Department
City of Apache Junction
Home of the Superstition Mountains

June 25, 2015

Ms. Mona Aglan-Swick, P.E.
Traffic Engineering Group, Traffic Safety Section
Arizona Department of Transportation
1615 W. Jackson ST., MD 065R
Phoenix, AZ 85007-3217

RE: Highway Safety Improvement Program (HSIP) Project Determination and Application

COG/MPO: MAG
Agency: City of Apache Junction
Project Name: Ironwood Drive Safety Improvements
Project Location: Ironwood Drive: Elliot Avenue to Baseline Avenue

Dear Ms. Aglan-Swick:

The City of Apache Junction is submitting herewith a project application for local Highway Safety Improvement Program (HSIP) funding. This road safety improvement project was identified through the local network crash data screening process and meets all requirements of Title 23. The proposed request is for the installation of inside and outside shoulder rumble strips, median cable barrier, and median refuges for enforcement along Ironwood Drive from the Elliot Avenue Alignment to Baseline Avenue and does not include any non-infrastructure funding request. The installation will address run-off road crashes observed along this segment of Ironwood Drive. A contractor, procured through the ADOT Local Government process, will perform the work. Ground disturbing activities are anticipated within the unpaved median of Ironwood Drive as part of this project. No utility relocations are anticipated.

During the most recent five year period ending December 31, 2014, the City experienced 109 total crashes including 1 fatal and 1 incapacitating crash along the project limits. With a Combined Crash Reduction Factor (CCRF) of 41% obtained from the ADOT 4/5 Star list the City could see a 5-year reduction of 44 crashes including 0.20 fatal and 0.20 serious injury crashes. (*Crash Modification Clearing House*, Countermeasures - Install any type of median barrier = CRF 34%, Install shoulder rumble strips = CRF 10%)

The City of Apache Junction has determined that, in accordance with 23 USC 148(a)(4)(A), this project is consistent with MAG's Draft 2015 Strategic Transportation Safety Plan and the State's 2014 SHSP. It supports the Roadway Infrastructure and Operations Lane/Roadway Departure and Speeding and Aggressive Driving emphasis areas.

B/C Ratio = 6.2

Weighted HSIP Score = 45.2

The City of Apache Junction has estimated the total project cost of this project to be \$450,122. Of that amount, request ADOT determine if \$450,122 is HSIP eligible. In accordance with Title 23, the Federal share for these safety improvement items are eligible to be funded at 100% Federal share per 23 U.S.C. 120(c) as described in Code of Federal Register 23 CFR Part 924. Therefore, the City of Apache Junction does not propose to contribute any local match for the above mentioned project. Table 1 summarizes the anticipated cost estimate projected for this project.

RE: Highway Safety Improvement Program (HSIP) Project Determination and Application

COG/MPO: MAG

Agency: City of Apache Junction

The City of Apache Junction is aware that, if funded, additional HSIP funds above the attached estimated cost are not available to pay for excess costs and that other funds whether STP, local or other will have to be provided or secured by the City of Apache Junction to cover the additional costs or the project will have to be withdrawn and resubmitted in the next call-for-projects.

The City of Apache Junction agrees to conduct and provide to ADOT TSS on a yearly basis a written before-and-after study utilizing the same crash data included in the countermeasure influence area in order to determine the effectiveness of the countermeasure on fatal and serious injury crashes.

The City of Apache Junction further understands that Federal funds can only be used once to install or upgrade either a spot or systemic countermeasure and that once installed, the City of Apache Junction will maintain the countermeasure at or above the standard to which it was installed.

If you have any questions, please contact me at 480-474-8549 or email RSchatz@ajcity.net.

Sincerely,

Raquel C. Schatz, Project Engineer
City of Apache Junction - Public Works
575 E. Baseline Avenue
Apache Junction, Arizona 85119

Attachments: Application (excel format) to include cost estimate
B/C Ratio and Crash Data
Project Vicinity Map
Project Work Limits Map
Ironwood Drive Typical Section

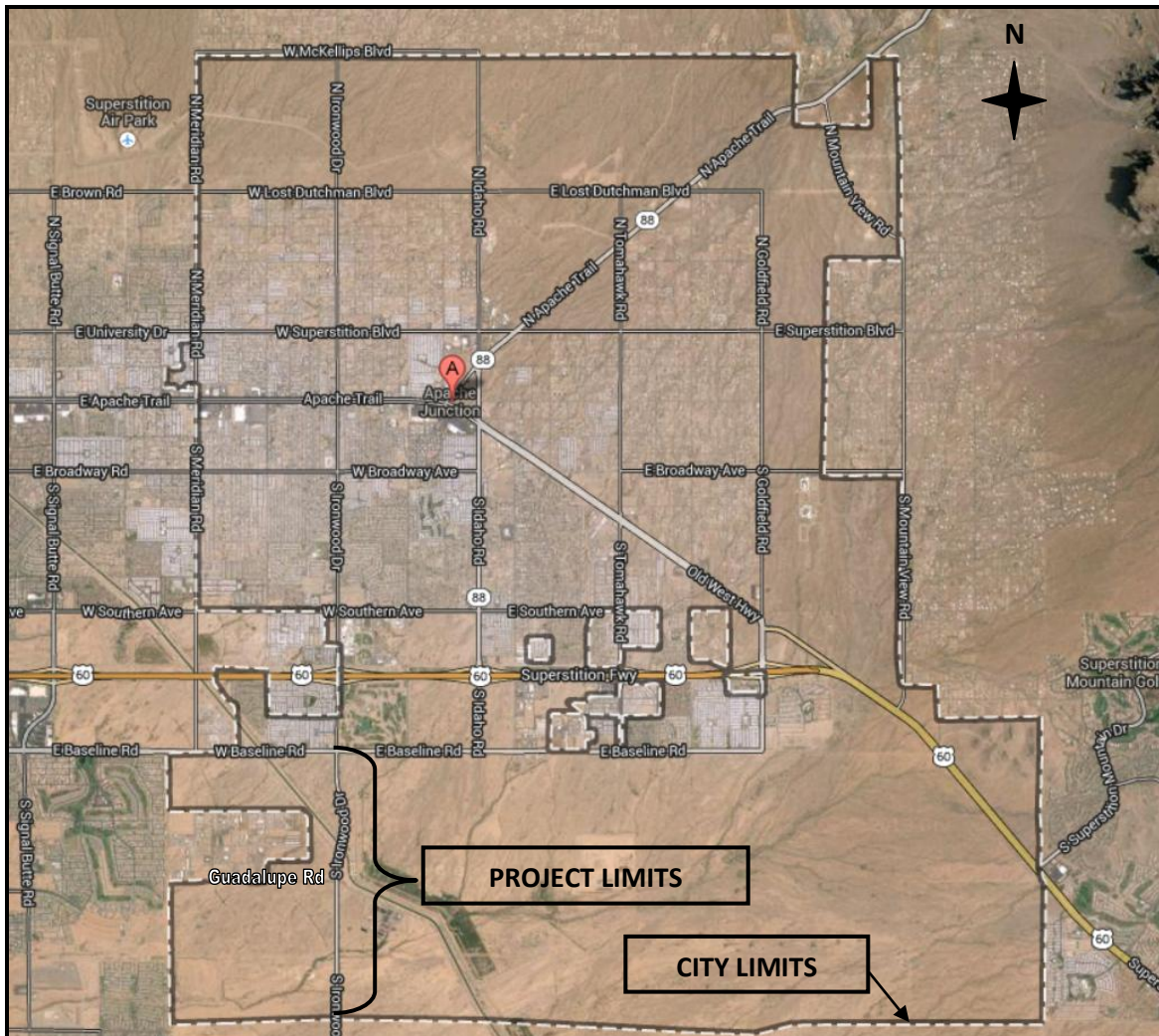
ADOT LOCAL HIGHWAY SAFETY IMPROVEMENT PROGRAM
APPLICATION - COST ESTIMATE
Table 1

Agency:	City of Apache Junction	Name of Project:	Ironwood Drive Safety Improvements					
HSIP Project Cost Estimate Worksheet								
Project Cost Estimate:	Description:	Quantity:	Cost (Unit):	Total Cost	HSIP:	Local Match:	Other Amt:	TOTAL COST
					100.00%	0.00%	0.00%	
Pre-Design/Scoping:		1	\$ 28,000.00	\$ 28,000.00	\$ 28,000.00	\$ -	\$ -	\$ 28,000.00
Design:		1	\$ 28,000.00	\$ 28,000.00	\$ 28,000.00	\$ -	\$ -	\$ 28,000.00
ADOT Admin Costs:		1	\$ 30,000.00	\$ 30,000.00	\$ 30,000.00	\$ -	\$ -	\$ 30,000.00
Sub-Total	\$ 86,000.00			\$ 86,000.00	\$ 86,000.00	\$ -	\$ -	\$ 86,000.00
Construction:	Ground-In Rumble Strip (LF)	42000	\$ 0.35	\$ 14,700.00	\$ 14,700.00	\$ -	\$ -	\$ 14,700.00
Construction:	Median Cable Barrier (LF)	10500	\$ 17.00	\$ 178,500.00	\$ 178,500.00	\$ -	\$ -	\$ 178,500.00
Construction:	Median Refuge (EA)	2	\$ 2,000.00	\$ 4,000.00	\$ 4,000.00	\$ -	\$ -	\$ 4,000.00
Construction:	Median Cable End Terminal (EA)	16	\$ 3,000.00	\$ 48,000.00	\$ 48,000.00	\$ -	\$ -	\$ 48,000.00
Construction:		0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Construction:		0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Construction Sub-Total:				\$ 245,200.00	\$ 245,200.00	\$ -	\$ -	\$ 245,200.00
Traffic Control:		10.00%		\$ 24,520.00	\$ 24,520.00	\$ -	\$ -	\$ 24,520.00
Mobilization:		10.00%		\$ 24,520.00	\$ 24,520.00	\$ -	\$ -	\$ 24,520.00
Sub-Total	\$ -			\$ 269,720.00	\$ 269,720.00	\$ -	\$ -	\$ 269,720.00
Construction Admin :		14.00%			\$ 37,760.80	\$ -	\$ -	\$ 37,760.80
Unidentified Items:		10.00%			\$ 26,972.00	\$ -	\$ -	\$ 26,972.00
Contingencies :		5.00%			\$ 13,486.00	\$ -	\$ -	\$ 13,486.00
Post Design:		1.00%			\$ 2,697.20	\$ -	\$ -	\$ 2,697.20
Communications		5.00%			\$ 13,486.00	\$ -	\$ -	\$ 13,486.00
		0			\$ -	\$ -	\$ -	\$ -
		0			\$ -	\$ -	\$ -	\$ -
		0			\$ -	\$ -	\$ -	\$ -
		0			\$ -	\$ -	\$ -	\$ -
		0			\$ -	\$ -	\$ -	\$ -
Sub-Total					\$ 94,402.00	\$ -	\$ -	\$ 94,402.00
								\$ -
TOTAL REQUEST					\$ 450,122.00	\$ -	\$ -	\$ 450,122.00

Comments: Assumed 2 16-ft x 16-ft median refuges matching existing pavement structural section.

Required for all HSIP Applications					
Agency:	City of Apache Junction	Title of Project:	Ironwood Drive Safety Improvements		
Benefit / Cost Ratio Tabulation					
Annual Benefit Tabulation					
Severity	Annual Average	Estimated CMF* Reduction	Total Reduction	Unit Cost	Annual Benefit
Fatal	0.20	41%	0.08	\$5,800,000	\$475,600
Incapacitating Injury	0.20	41%	0.08	\$400,000	\$32,800
Total Annual Benefits					\$508,400
Costs					
Total Project Cost					\$450,122
Project Life (years)					10
Interest Rate (%)					8%
Capital Recovery Factor					0.1490
Annual Construction Cost					\$67,081
Annual Maintenance Cost					\$14,000.00
Total Annual Costs					\$81,081
Benefit / Cost					
Annual Benefit	Annual cost		Benefit / Cost Ratio		
\$508,400	\$81,081		6.2		
<p>*CMF Sources:</p> <p>CMF ID: 42, Install any type of median barrier - CRF = 0.34</p> <p>CMF ID: 3426, Install shoulder rumble strips - CRF = 0.10</p> <p>CCRF = 1-(1-0.34)*(1-0.10) = 0.41</p>					

PROJECT VICINITY MAP



IRONWOOD DRIVE, ELLIOT AVENUE TO BASELINE AVENUE

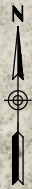


BASILINE AVE

CENTRAL ARIZONA PROJECT CANAL

GUADALUPE RD

IRONWOOD DR



Project Work Limits

SAFETY IMPROVEMENTS
IRONWOOD DRIVE
ELLIOT AVE TO BASELINE AVE

Project Work Limits Map

ELLIOT AVE ALIGNMENT

